

What is claimed is:

1. Internal combustion engine having an exhaust gas turbocharger and an exhaust gas recirculation device, whereby the internal combustion engine has a plurality of cylinders and each cylinder of the internal combustion engine has at least one intake valve and at least one outlet valve, and a compressor of the exhaust gas turbocharger is assigned to an inlet and an asymmetrical exhaust gas turbine of the exhaust gas turbocharger is assigned to an outlet of the internal combustion engine, the compressor is connected to the inlet via a charge air line, the exhaust gas turbine has two intake ports with different flow cross sections which are separated from one another by means of a partition and each inflow channel is connected to the outlet through its own exhaust gas inlet line whereby each exhaust gas inlet line is assigned a partial number of cylinders of the internal combustion engine and an exhaust gas recirculation line leads from the exhaust gas inlet line of the intake port having the smaller flow cross section to the charge air line,

wherein a control unit is provided to control the valve control times of the respective intake valves and/or the outlet valves of the individual cylinders of the internal combustion engine are to be different whereby the cylinders supplying the exhaust gas recirculation device have shorter valve overlap times or none at all in comparison with the cylinders supplying the exhaust gas recirculation device.

2. Internal combustion engine as claimed in Claim 1, wherein the valve control times of the intake valves of the cylinders which supply the exhaust gas recirculation device are retarded.

3. Internal combustion engine as claimed in Claim 1, wherein the recirculated exhaust gas is divided differently among the individual cylinders of the internal combustion engine, with a partial number of cylinders of the internal combustion engine receiving the largest amount or the total amount of the recirculated exhaust gas and the remaining cylinders receiving the smallest amount or none at all of the recirculated exhaust gas.



4. Internal combustion engine as claimed in Claim 2, wherein the recirculated exhaust gas is divided differently among the individual cylinders of the internal combustion engine, with a partial number of cylinders of the internal combustion engine receiving the largest amount or the total amount of the recirculated exhaust gas and the remaining cylinders receiving the smallest amount or none at all of the recirculated exhaust gas.
5. Internal combustion engine as claimed in Claim 3, wherein the cylinders which do not supply the exhaust gas recirculation device receive the largest amount of the recirculated exhaust gas or the total amount, and the cylinders supplying the exhaust gas recirculation device receive the smallest amount of recirculated exhaust gas or none at all.
6. Internal combustion engine as claimed in Claim 4, wherein the cylinders which do not supply the exhaust gas recirculation device receive the largest amount of the recirculated exhaust gas or the total amount, and the cylinders supplying the exhaust gas recirculation device receive the smallest amount of recirculated exhaust gas or none at all.
7. Internal combustion engine as claimed in Claim 1, wherein the internal combustion engine is designed in the form of a series design having four or six cylinders whereby a partial number of the cylinders that do not supply the exhaust gas recirculation device amounts to at least half of the total number of the cylinders of the internal combustion engine.
8. Internal combustion engine as claimed in Claim 2, wherein the internal combustion engine is designed in the form of a series design having four or six cylinders whereby a partial number of the cylinders that do not supply the exhaust gas recirculation device amounts to at least half of the total number of the cylinders of the internal combustion engine.
9. Internal combustion engine as claimed in Claim 3, wherein the internal combustion engine is designed in the form of a series design having four or six cylinders whereby a partial number of the cylinders that do not supply the exhaust gas recirculation device



amounts to at least half of the total number of the cylinders of the internal combustion engine.

10. Internal combustion engine as claimed in Claim 4, wherein the internal combustion engine is designed in the form of a series design having four or six cylinders whereby a partial number of the cylinders that do not supply the exhaust gas recirculation device amounts to at least half of the total number of the cylinders of the internal combustion engine.

11. Internal combustion engine as claimed in Claim 5, wherein the internal combustion engine is designed in the form of a series design having four or six cylinders whereby a partial number of the cylinders that do not supply the exhaust gas recirculation device amounts to at least half of the total number of the cylinders of the internal combustion engine.

12. Internal combustion engine as claimed in Claim 6, wherein the internal combustion engine is designed in the form of a series design having four or six cylinders whereby a partial number of the cylinders that do not supply the exhaust gas recirculation device amounts to at least half of the total number of the cylinders of the internal combustion engine.

13. Internal combustion engine as claimed in Claim 1, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

14. Internal combustion engine as claimed in Claim 2, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.



15. Internal combustion engine as claimed in Claim 3, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

16. Internal combustion engine as claimed in Claim 4, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

17. Internal combustion engine as claimed in Claim 5, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

18. Internal combustion engine as claimed in Claim 6, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

19. Internal combustion engine as claimed in Claim 7, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

20. Internal combustion engine as claimed in Claim 8, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

21. Internal combustion engine as claimed in Claim 9, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

22. Internal combustion engine as claimed in Claim 10, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.



23. Internal combustion engine as claimed in Claim 11, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

24. Internal combustion engine as claimed in Claim 12, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

25. A method of operating an internal combustion engine having an exhaust gas turbocharger and an exhaust gas recirculation device, whereby the internal combustion engine has a plurality of cylinders and each cylinder of the internal combustion engine has at least one intake valve and at least one outlet valve, and a compressor of the exhaust gas turbocharger is assigned to an inlet and an asymmetrical exhaust gas turbine of the exhaust gas turbocharger is assigned to an outlet of the internal combustion engine, the compressor is connected to the inlet via a charge air line, the exhaust gas turbine has two intake ports with different flow cross sections which are separated from one another by means of a partition and each inflow channel is connected to the outlet through its own exhaust gas inlet line whereby each exhaust gas inlet line is assigned a partial number of cylinders of the internal combustion engine and an exhaust gas recirculation line leads from the exhaust gas inlet line of the intake port having the smaller flow cross section to the charge air line, said method comprising:

controlling the valve control times of the respective intake valves and/or the outlet valves of the individual cylinders of the internal combustion engine are to be different whereby the cylinders supplying the exhaust gas recirculation device have shorter valve overlap times or none at all in comparison with the cylinders supplying the exhaust gas recirculation device.

26. A method according to Claim 25, wherein the valve control times of the intake valves of the cylinders which supply the exhaust gas recirculation device are retarded.



27. A method according to Claim 25, wherein the recirculated exhaust gas is divided differently among the individual cylinders of the internal combustion engine, with a partial number of cylinders of the internal combustion engine receiving the largest amount or the total amount of the recirculated exhaust gas and the remaining cylinders receiving the smallest amount or none at all of the recirculated exhaust gas.

28. A method according to Claim 27, wherein the cylinders which do not supply the exhaust gas recirculation device receive the largest amount of the recirculated exhaust gas or the total amount, and the cylinders supplying the exhaust gas recirculation device receive the smallest amount of recirculated exhaust gas or none at all.

29. A method according to Claim 25, wherein the internal combustion engine is designed in the form of a series design having four or six cylinders whereby a partial number of the cylinders that do not supply the exhaust gas recirculation device amounts to at least half of the total number of the cylinders of the internal combustion engine.

30. A method according to Claim 25, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.